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APPLICANT : KANEBO LTD;

INVENTOR : OTOI KIYOSHI;

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TITLE : PRODUCTION OF AQUEOUS SOLUTION OF SILK FIBROIN AT HIGH
CONCENTRATION

ABSTRACT : PURPOSE: To simply produce the subject aqueous solution without containing any microgelled part therein at a high efficiency by feeding a stock solution prepared by dissolving silk fibroin in an aqueous solution of a salt to a dialyzer, applying a pressure to the stock solution in a dialytic membrane, causing a pressure difference between the inside and the outside of the dialytic membrane and desalting and dialyzing the stock solution.

CONSTITUTION: A raw silk waste freed of a gluey protein sericin and oils by degumming is dissolved in a 40wt.% aqueous solution of calcium chloride and ethyl alcohol using a kneader under heating at 50°C to prepare a stock solution comprising the silk fibroin solution. The resultant stock solution is then fed to a hollow fiber type dialyzer formed of a hollow fiber type membrane made of Cuprophane (R) as a material and a pressure is applied to the stock solution so as to provide a discharge flow rate of the aqueous solution of the silk fibroin from the dialyzer of 0.5-1.5 times based on the flow rate of the stock solution to the dialyzer. Thereby, a pressure difference is caused between the inside and the outside of the dialytic membrane to desalt and dialyze the stock solution. Thereby, the objective aqueous solution of the silk fibroin at a high concentration useful for fibers and fiber processing, cosmetics, materials for medical uses, other immobilized membranes for biosensors, etc., is efficiently obtained.

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